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NOTE ON THE FURTHER HISTORY OF THE CASE OF FILARIA LOA PREVIOUSLY REPORTED TO THE SOCIETY

D.A.Robertson

Transactions of the Ophthalmological Society of the United Kingdom

1897, 17.

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TRANSACTIONS

OF THE

OPHTHALMOLOGICAL SOCIETY

OF THE

UNITED KINGDOM

VOL. XVII

SESSION 1896-7

WITH

LIST OF OFFICERS, MEMBERS, ETC.

LONDON
J. & A. CHURCHILL
7, GREAT MARLBOROUGH STREET

1897

2. *Note on the further history of the case of filaria loa previously reported to the Society.*

By D. Argyll Robertson.

My patient, Miss H—, affected with filaria loa, whose case was brought under the notice of this Society at the meetings in October, 1894, and March, 1895,* having improved greatly in general health, returned to Old Calabar about a month after my last report.

Before leaving this country she had remained free from the sensations due to movements of the parasite, but scarcely had she returned to the tropics when her symptoms recurred. In a letter written in January, 1896, she mentions that she had frequently experienced itching behind her eyes, but that no worm had made its appearance in front. The swellings in the arms had recurred at intervals, and a medical man in attendance thought that they indicated beri-beri. She further stated that she had had a conversation with Miss Kingsley, the lady explorer, who informed her that nearly every one on the Ogowe River near Gaboon suffered from these worms. My patient also, as requested, sent specimens of mosquitoes and sand-flies, which were subjected to microscopic examination by Dr. Manson and myself. We failed to detect in their interior anything that could be viewed as embryo filariæ.

I did not hear again from her till July last year, when she wrote informing me that one night on going to bed she felt a little nip in the side like a mosquito bite, but upon looking found a worm wriggling about under the skin. Fortunately one of the missionaries, who had received a little medical training, was at hand, and managed with knife and forceps to extract it. She put the worm into preservative solution in a bottle, and sent it to me for examination. She also mentioned that she had for

* 'Transactions,' vol. xv.

some weeks previously been troubled with a worm occasionally appearing under the conjunctiva. Since then she had on two occasions had incisions made on the knuckles for a worm that seemed to wander down her arm and suddenly appear at the wrist or back of the hand. She stated that insects do not bite her often, that mosquitoes are few where she was staying, and that she did not think she had suffered from a sand-fly bite since she came out.

Miss H— did not stand the climate of Calabar well, and became again affected with severe colitis and dysentery, so that she had to be sent home about the middle of January, arriving in this country in the beginning of March in a very feeble, exsanguine state. She is residing in the neighbourhood of Edinburgh, and I have seen her twice since her return, the last time being on the 3rd of June, when I found her much improved in her general health, the dysentery having almost entirely ceased. She explained to me that the worm removed from her at Calabar had been extracted from the abdominal wall in the left lumbar region. She also stated that she always has nausea and headache at the times the worms are troubling her, and that occasional swellings in the arms such as she has are not uncommon among natives of or residents in Old Calabar, and that all of those thus affected whom she questioned were troubled with worms.

She has recently had visits of the worm to the lids of both eyes, to the side of the nose, the crown of the head, the left shoulder, and under the skin of both hands, especially over the knuckle of the middle finger of the left hand, but the worm's visits were of very short duration.

On the 15th of last month the parasite reappeared in the abdominal wall, on this occasion close to the umbilicus. Attempts were made by a doctor in her immediate neighbourhood to secure the worm, but they failed, the parasite disappearing before suitable forceps could be got to seize it.

At the suggestion of Dr. Manson I asked Dr. Thin, under whom the patient had placed herself for general treatment, to undertake the microscopic examination of her blood drawn at various periods of day and night, of the urine, saliva, fæces, &c., to determine whether any embryo filariæ were present. This investigation he kindly undertook, and has sent me the following report:

"I have examined blood-smears drawn from Miss H—'s finger at 4, 5, 6, 7, and 12 o'clock a.m., and 1, 3, 4, 7, 10, 11, and 12 p.m., but can find no trace whatever of the embryos of the *Filaria loa.* I have also examined microscopically the fæces and mucus associated with the dysenteric condition from which she suffers, but have not seen anything to throw light on the development of the filaria. The urine, saliva, and nasal mucus have also been examined, but with a negative result.

"(*Signed*) ROBERT THIN.

"*June 2nd*, 1897."

The preparation sent to me as the parasite removed from Miss H—'s side was on examination found to consist of the uterine tubes and appendages and alimentary canal of a filaria. The uterine tubes were stuffed with ova and embryos. Unfortunately there was not a fragment of the wall or integument of the worm to be found, which renders the diagnosis of the variety of filaria somewhat incomplete; but as the patient was one affected with filaria loa, and the embryo filariæ presented exactly similar characters to those in a specimen of undoubted filaria loa, we can scarcely avoid the conclusion that this parasite was of that nature, and, judging by the extent of the viscera, it must have been a large-sized worm. I handed the specimen over to Dr. Manson for examination, and he reports, "The fragment you sent me was part of the uterus of a minute nematode, and judging by its size would answer very well to the uterus of *Filaria loa.* It was crowded with embryos, some of which had escaped, and could be seen distinctly although distorted and shrivelled some-

what by the preserving medium. They were shaped exactly like *Filaria nocturna.* One important feature I was able to make out, namely, the embryo was enclosed in a sheath. I can say no more of any value on the subject; my belief is that the fragment belonged to *Filaria loa.*"

Admitting that this specimen is from a *Filaria loa,* the conclusion is obvious that that parasite is one that does not confine its visits to the neighbourhood of the eye or eyelids, but may occur under the skin of any part of the body, probably attracting attention only when it appears at a part where the skin is thin and sensitive, as in the eyelids, or when it presents itself under the delicate thin conjunctiva. It would be interesting to investigate how the worm travels—whether it forms burrows or channels in the cellular tissue, along which it may glide rapidly and easily (indications of which I imagine I observed when removing the parasite from my patient's eyelid), or whether it can penetrate the meshes of the cellular tissue readily in any direction. I think there can be little doubt that, as was suggested by Dr. Manson, the bosses on the surface of the integument facilitate the movements of the parasite.

It is, perhaps, worth noting that whereas my patient was, while in this cool climate, free for months from indications of the presence of the worms, no sooner does she return to the tropics than the parasites are restored to life and activity.

Since my last communications to the Society two additional specimens of the *Filaria loa* have been described, one by Professor Hirschberg, of Berlin,* and one by Professors Ludwig and Saemisch, of Bonn.†

Professor Hirschberg's specimen had been removed by a German merchant from the eye of a negro in the French Congo country. The parasite was preserved in

* 'Berl. klin. Wochenschr.,' 1895, No. 44.

† 'Zeitschr. für wissensch. Zool.,' Bd. lx, Heft 4.

spirit and sent to the Berlin Museum, and was exhibited by Dr. Hirschberg at a meeting of the Berlin Medical Society in October, 1895.

The other specimen was removed by Professor Saemisch in August, 1895, from the conjunctiva of a Russian naval officer who had made many voyages to the West Coast of Africa, and had lived for considerable periods in different parts of the country. His last visit to West Africa was in 1891, but he had also travelled in Egypt in 1892–3.

The worm was female, measured 41 mm. in length and 0·5 mm. in thickness, and had the integument ruptured in the process of extraction. It was subjected to careful examination by Professor Ludwig, who gives a minute report of its characters, which corresponded very closely to those of the female parasite removed from my patient as described by Dr. Manson.

Dr. Manson has also authorised me to mention that he has at present a case of filaria loa under his care in whom the worm never appears in the eye, but every few months visits the forehead, bridge of nose, &c. He, like my patient, is affected with fugitive puffy swellings in the arms. Dr. Manson has carefully examined the blood and the urine in this case, but has failed to detect embryos.

There can now be little question that the parasite is much more common than was previously believed, at any rate in the Congo region, and it is to be hoped that some of our professional brethren resident in West Africa may soon by careful investigation discover the intermediate host, if such there be, and the precise course of propagation and development of this worm.

(*June* 10*th*, 1897.)

The President asked whether there was anything to show how many worms one individual might harbour.

Dr. Argyll Robertson replied that it was unknown whether one worm constantly changed its position and appeared at different parts of the body, or whether there were several worms. Dr. Manson thought there were a

large number of worms in the body, and that sometimes one and sometimes another came to the surface.

Further note, September 6th, 1897.

At the end of last month I obtained another specimen of *Filaria loa.* It appeared that my patient about the middle of August observed a worm under the skin of her right breast and got her sister, who is studying medicine, to undertake its extraction. This was successfully effected by seizing it with forceps and cutting down upon it. Miss H— further informs me that within ten minutes after the operation she felt a bite in her left breast, and on looking found another worm there. Her sister attempted to get it also, but the forceps slipped and the filaria escaped. Unsuccessful attempts had also been made to remove worms from her right wrist and the knuckle of her left hand, and she had felt the parasite lively on her left shoulder.

The filaria removed was a large-sized female one. I have sent it to Dr. Manson for careful examination.

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